

A NEW SECTION AND SPECIES OF SPHAGNUM FROM ECUADOR

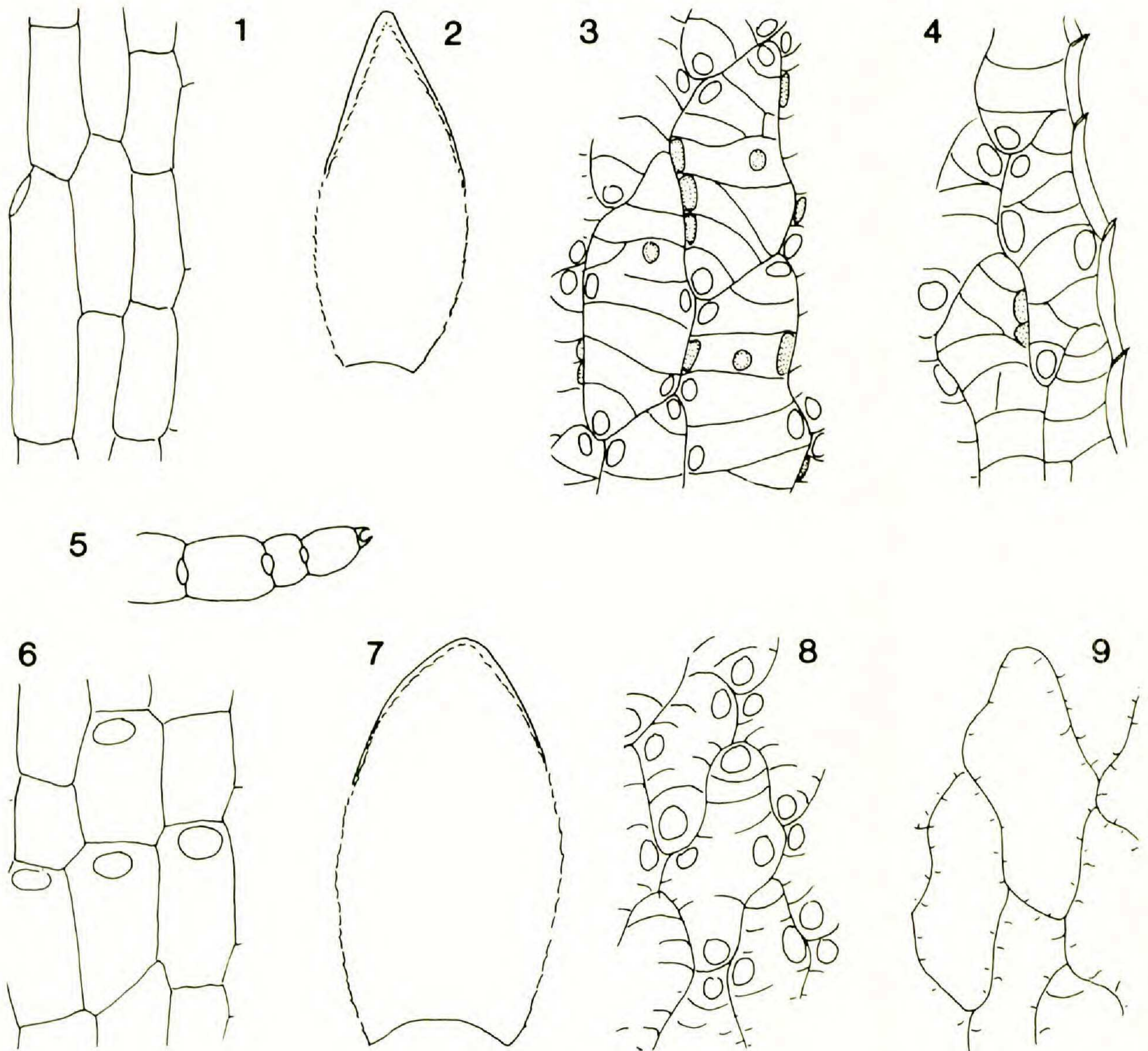
Howard Crum
University of Michigan Herbarium
North University Building
Ann Arbor, Michigan 48109

In the genus *Sphagnum*, resorption furrows are highly distinctive features of the section *Sphagnum* and the section *Rigida*, limited, however, to the branch leaves. I recently received, from William C. Steere, a pretty little *Sphagnum* of Ecuador with resorption furrows at the margins of both branch and stem leaves. The plant shows a number of unique characters that separate it from the sections *Sphagnum* and *Rigida*. The curious occurrence of resorption furrows on the stem leaves seems to justify the erection of a new section of the genus.

***Sphagnum* sect. *Cuculliformes* Crum, sect. nov. et *S. cuculliforme* Crum, sp. nov.¹**

Plants slender, about 5 cm high, pale, brownish white below, pink or pinkish brown above. Terminal bud stout. Stems brown; wood cylinder dark red-brown; cortical cells in 2 (–3) layers, subquadrate to short-rectangular, without fibrils, mostly with a single, large, round pore at the upper end. Stem leaves crowded, loosely erect, shiny brown, relatively large, 1.5–1.7 mm long, concave, broadly elliptic or oblong-ovate, cucullate-obtuse, denticulate-bordered all around because of a marginal resorption furrow; hyaline cells undivided, on the outer surface with fibrils variously reduced, mostly to mere stumps, with 3–4 small, round, ringed pores at the ends and corners, generally grouped in 3's at adjacent angles, in the lower half of the leaf with larger, round, thin-margined pores and also with membrane pleats near the leaf insertion, on the inner surface with fibrils reduced to mere stumps, the membrane nearly all resorbed except near the leaf insertion where there are 2–3 large, round, thin-margined pores about as wide as the cells. Branches in fascicles of 2, similar, both ascending. Branch cortex in 1 layer, consisting of 2 kinds of cells, the retort cells larger, often 1 above another, very short-necked. Branch leaves loosely erect or erect-spreading, concave, 1.1–1.3 mm long, oblong-ovate, obtuse-cucullate, denticulate-bordered all around because of a marginal resorption furrow; hyaline cells fibrillose in the upper half or more, on the outer surface with 2–5 rather small, elliptic, ringed pores at ends

¹Plantae graciles, pallido-fuscae vel subroseae. Epidermis caulium stratis 2–3, efibrosa; parietes exteriores cellularum superficialium foramine uno instructi. Cylindrus lignosus obscure rufo-fuscus. Folia caulina fusca, mediocriter magna, 1.5–1.7 mm longa, late oblongo-ovata, concava, apice cucullato, marginibus lateralibus sulco resorptorio; cellulae hyalinae exteriore superficie ± fibrosae, superne 3–4 poris parvis rotundis in angulis, interiore fere efibrosae, lacunis membranaceis instructae. Fasciculi ramorum e ramulis duobus compositi, cellulis corticis lageniformibus apice pertuso leniter prominulis. Folia ramulina parva, 1.1–1.3 mm longa, oblongo-ovata, concava, apice cucullato, marginibus lateralibus sulco resorptorio; cellulae hyalinae superficie interiore folii poris rotundis magnis prope margines laterales, dorso poris veris ternis in cellularum angulis conjunctis sitis, etiam pseudoporis ad commissuras dispositis; cellulae chlorophylliferae sectione transversali ellipticae, inter hyalinas perfecte mediae, utroque latere foliorum inclusae.



Sphagnum cuculliforme. 1. Branch cortex, $\times 200$. 2. Branch leaf, $\times 30$. 3. Upper cells of branch leaf, outer surface, $\times 300$. 4. Upper marginal cells of branch leaf, outer surface, showing resorption furrow, $\times 300$. 5. Portion of branch leaf in section, $\times 200$. 6. Stem cortex, $\times 200$. 7. Stem leaf, $\times 30$. 8. Upper cells of stem leaf, outer surface, $\times 300$. 9. Upper cells of stem leaf, inner surface, $\times 300$.

and corners, generally in 3's at adjacent angles, also frequently with few to several, thin-margined, narrowly elliptic pseudopores at the commissures and, especially toward the leaf apex, often with 2–3 very small, round, unringed pores or pseudopores in a more median position, in the lower half of the leaf with 2–3 large, round, thin-margined pores, on the inner surface with few to several narrowly elliptic, thin-margined pseudopores at the commissures; green cells in cross section elliptic, central, entirely included, the hyaline cells slightly convex on both surfaces, with smooth inner walls. Inflorescences and sporophytes unknown.

TYPE: ECUADOR. Steep rocky slopes with scattered shrubs, 2200–2250 m, General Plaza (Limón)-Gualaceo road, 18–20 km from Limón, 12 June 1979, *B. Løjtnant, A. & U. Molau 14627* (holotype: MICH; isotype: NY); paratype: 14611 MICH, NY).

Important characters include outer cells of the stem cortex uniporose and lacking spiral fibrils; stem leaves broadly oblong-ovate, cucullate-concave, bordered by a resorption furrow and having hyaline cells more or less fibrillose, with small pores in 3's at adjacent angles on the outer surface and, on the inner surface, with the wall mostly resorbed so that the fibrils are reduced to mere

stumps; branches in pairs, stout and spreading to ascending; branch cortex consisting of retort cells in addition to non-porose cells; branch leaves somewhat smaller and narrower than stem leaves, cucullate-concave, bordered by a resorption furrow but not roughened at back of the apex; hyaline cells with small pores in 3's at adjacent angles (and also some commissural pseudopores and a scattered few, round, median pores or pseudopores) on the outer surface; green cells central and included.

The species has some resemblances in aspect to *Sphagnum magellanicum* Brid., in the section *Sphagnum*, owing to the pinkish tinges of the upper, exposed leaves and their broad, hooded, and imbricate nature. Also the green cells of the branch leaves are central and entirely included. In the cross-sectional nature of the green cells and the tendency to show numerous pseudopores in the branch leaves, it also resembles *S. compactum* DC., in the section *Rigida*. These are merely incidental similarities, giving no evidence of close relationship. The section *Sphagnum* differs in many ways. It has clearly differentiated stem and branch leaves. The stem leaves are flat, lingulate, and bordered by a fine-meshed fringe. The cells of the stem cortex are most generally fibrillose, and those of the branch cortex are also commonly fibrillose and they are uniform in size, shape, and structure, none of them differentiated as retort cells. The branch leaves are roughened at back of the apex because of resorption. The *Rigida* have very small stem leaves with entire margins, and the branch leaves are truncate and not hooded at the tip. All cells of the branch cortex are porose at their upper ends and retortlike. Furthermore, the pores are grouped in 3's on the inner rather than the outer surface of the branch leaves.